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THE ROLE OF WOMEN IN THE NAVY: A STUDY
OF ATTITUDES AND SCALE DEVELOPMENT

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Naval Personnel Research and Development
Laboratory
Washington, D. C.

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13. ABSTRACT

Data from two surveys were analyzed in an investigation of attitudes toward the role of women in the Navy, reports of discrimination, and evaluation of questionnaire items used to measure attitudes toward Navy women. It was found that, while white and black women perceived themselves to be discriminated against relative to white men, both black and white women reported less discrimination than was reported by black men. Discrimination appeared to have the greatest effect upon career plans for white enlisted men. Women tended to report more favorable opinions regarding women's abilities than did men. Opinions of women's abilities were found to be related to attitudes toward expanding the role of Navy women. On the basis of the results of item analyses, the questionnaire items were re-grouped into consistent subsets. It was recommended that attempts to induce naval personnel to regard favorably the expanded role proposed for Navy women should be focused first on perceptions of women's ability to perform the new duties. The questionnaire items should be validated against an independent behavioral criterion.

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FOREWORD

The assistance of Robin Tsai is gratefully acknowledged for conducting many of the statistical analyses for this research. Many helpful suggestions were contributed by Claude Braunstein to the research design.

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SUMMARY

Problem

The Navy is actively engaged in seeking a more productive utilization of the talents and training of Navy women. Implementing changes in the role of Navy women would be facilitated by favorable attitudes toward the changes on the part of both men and women. An understanding of the bases for negative and positive attitudes would aid in improving negative attitudes and maintaining positive attitudes. Research in this area requires tools for measuring such attitudes.

Purpose

This research represents an attempt to better understand negative and positive attitudes toward expanding the role of women in the Navy. The research includes two phases. In the first phase, reports of discrimination and of stereotyped, prejudicial attitudes were investigated. The relationship between these reports and characteristics such as race, sex, education, and career motivation was analyzed. In the second phase, an attempt was made to differentiate components of attitudes toward expanding the role of Navy women. Such attitudes are expected to be determined both by beliefs as to what roles women can perform and by feelings about what roles women should perform. In addition, in the second phase, the usefulness of several attitude items for measuring these components was assessed.

Background

Theories and research relating to social stratification and prejudice identify concepts and principles useful in clarifying the position of women as a subordinate group in the Navy. Higher status groups can be expected to resist efforts of lower status groups to change the distribution of power and influence. Such resistance is supported by negative stereotyping of the lower status group.

However, the situation of women in the Navy cannot be assumed to be the same as that of minority groups. A more important consideration in regard to women may be that of interrole conflict. Each individual expects certain behaviors and characteristics of persons occupying the social position "woman." Certain behaviors and characteristics are expected of persons occupying various positions in the Navy such as "commanding officer." To the extent that these two sets of expectations differ for a given individual, he will experience conflict in regard to the idea that a woman be a commanding officer. He will feel that women should not be in certain positions. It is also possible, however, for

an individual to be opposed to such positions for women on the basis of his perception of women's ability to perform the role. That is, he would believe that women cannot perform the duties of certain positions. Attempts to improve attitudes toward changing roles for Navy women should use different techniques depending upon the basis for opposition.

Approach

Data were obtained from two mail surveys: the Navy Sample Survey (NSS) 72-1 and the Women in the Navy (WIN) Survey. The NSS 72-1 provided information regarding perceived discrimination and prejudicial attitudes toward women. The WIN survey included items pertaining to both the perceived abilities of women and the preferred role for women in the Navy.

Analyses were conducted to determine the relative amount of discrimination reported as a function of race and of sex. The effects of perceived discrimination on career plans was investigated. The degree to which prejudicial, stereotyped attitudes toward women occurred as a function of race and of sex was assessed. It was predicted that prejudiced attitudes toward women would occur more frequently among those who held prejudiced attitudes toward minorities. Education was predicted to be negatively correlated with prejudice toward women and toward minorities.

Perceptions of the abilities of women were compared to attitudes regarding what roles women should perform to determine the relative frequency of combinations of positive and negative positions on each of these two opinions. Items used to measure attitudes toward the role of women in the Navy, opinions regarding their ability to perform certain roles, and perceptions of the degree to which women are accepted by naval personnel were analyzed for consistency within each set of items.

Results

White women and black women reported more discrimination than was reported by white men. However, both white women and black women reported less discrimination than was reported by black men. Black men most frequently cited race as the basis for perceived discrimination. Black women perceived discrimination due to both their race and their sex. It was predicted that perceptions of discrimination would be more highly related to the individual's career plans for black personnel than for white women. However, the strongest relationship was observed for the white enlisted men.

Women tended to report more favorable opinions regarding the ability of women than did men. However, there were differences among the women in their opinions. White women tended to have more favorable opinions

than did black women, and women officers tended to have more favorable opinions than did enlisted women.

Education was found to be correlated, to a small degree, with attitudes toward minorities for white men officers. Among white men officers level of education was positively related to opinions of the ability of women to command. The predicted relationship between prejudice toward minorities and toward women was observed only for officers.

Perceptions of the ability of women and attitudes toward expanding the role of Navy women were found to be highly interdependent. Most of the respondents to the WIN survey who were in favor of the expanded role expressed positive opinions regarding the ability of women. Similarly, those who were opposed tended to express negative views regarding women's ability.

The criterion employed for item evaluation was consistency among the items within each set of items. Most of the items within each of the groups were found to be highly interrelated. The items were re-grouped into more consistent sets.

Conclusions and Recommendations

The situation of women is different from that of minorities in the Navy. Policies intended to promote equal opportunities should consider not just objective evidence regarding discrimination, but also the perception of discrimination.

Women tend to be viewed as less capable than men in certain areas. However, no evidence has been provided regarding absolute judgments of the degree to which women are perceived as capable.

Attempts to induce naval personnel to regard favorably the expanded role proposed for Navy women should be focused first on perceptions of women's ability to perform the new duties. This could be accomplished through exposure to competent performance on the part of women.

Many of the items designed to measure attitudes and opinions regarding Navy women appear to be measuring what they were intended to assess. All of the items should be validated against an independent behavioral criterion.

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INTRODUCTION

Problem

The Navy is actively engaged in seeking a more productive utilization of the talents and training of Navy women. Implementing changes in the role of Navy women would be facilitated by favorable attitudes toward the changes on the part of both men and women. In the words of Admiral Bagley¹, "The real key to better management...is to close the gap between what policies permit and what is actually practiced in the daily working situation." According to Admiral Bagley, it is primarily in the area of attitudes that work remains to be done to achieve better management of Navy women. An understanding of the bases for negative and positive attitudes would aid in improving negative attitudes and maintaining positive attitudes. Research in this area requires tools for measuring such attitudes.

Purpose

This research represents an attempt to better understand negative and positive attitudes toward expanding the role of women in the Navy. The research includes two phases. In the first phase, reports of discrimination and of stereotyped, prejudicial attitudes are investigated. The relationship between these reports and characteristics such as race, sex, education, and career motivation is analyzed. In the second phase, an attempt is made to differentiate components of attitudes toward expanding the role of Navy women. Such attitudes are expected to be determined both by beliefs as to what roles women can perform and by feelings about what roles women should perform. In addition, in the second phase, the usefulness of several attitude items for measuring these components is assessed.

¹Memorandum of 1 April 1972: Attitudes regarding Navy women.

COLLECTION OF DATA

The data for this research were obtained from the responses to the Navy Sample Survey (NSS) 72-1 and the Women in the Navy (WIN) survey.

NSS 72-1 Survey

Description of NSS 72-1 Questionnaire Items

The NSS 72-1 incorporated twelve items designed to measure the degree to which men and women are perceived to differ on a number of abilities thought to be necessary for successful performance in the Navy. The respondents were asked to rate the extent to which men and women in the Navy possessed each ability. Other items in the questionnaire dealt with perceptions of the status of minorities in the Navy, the individual's perception of discrimination against himself in various areas of Navy life, and whether the individual had worked with, worked for, or supervised a member of the opposite sex. Other items relevant to this research assessed career intentions, level of education, and demographic information. The items which were used for this study, and the manner in which each was scored, are presented in Appendix A.

NSS 72-1 Sample

Table 1 shows the number of respondents in each of the eight groups used for these analyses. Because the original samples for the white males and for the black enlisted males were selected disproportionately by paygrade groups, these three groups were subsampled in order to make them representative. The numbers of persons remaining in each of the eight groups after this adjustment is also shown in Table 1.

Administration of NSS 72-1

The NSS 72-1 questionnaires were mailed directly to each of approximately 3,000 officers and 3,000 enlisted personnel. The respondents were asked to record their answers on a standard optical-scanning answer sheet. The questionnaires were initially mailed in February 1972. Those persons who had not returned their answer sheets within four weeks of the initial mailing received follow-up requests via their commanding officers. Eighty percent of the officers and seventy-five percent of the enlisted personnel contacted participated in the survey.

WIN Survey

Description of the WIN Questionnaire

The items were based, in part, on two previous surveys: "The Navy and the Woman Line Officer" (Coye, Denby, Hooper, & Mullen, 1973) and the "Navy Sample Survey (NSS) 72-1" (Navy Sample Survey..., 1972). The items were grouped into the following six areas: Personal Background; Human Relations; Acceptance of Women in the Navy; Abilities of Women in the Navy; The Role of Women in the Navy; Career Orientation and Background Information. The items used in the analyses for this investigation, and their scoring, are shown in Appendix B.

Sample for WIN Survey

Women and minority men make up only a small fraction of the total Navy population. In order to obtain samples from these groups that would be large enough for statistical analyses, a simple random sample from the officer population was supplemented by samples from the white women officers, the black women officers, and the black men officers. Similarly, a simple random sample from the enlisted population was supplemented by samples from the white enlisted women, the black enlisted women, and the black enlisted men. For certain analyses, the white men officers were selected within the random sample of officers and the white enlisted men were selected within the random sample of enlisted personnel. Table 2 describes the subgroups used for analyses.

Administration of the WIN Survey

The survey questionnaires were mailed directly to each of the individuals selected. A standard optical-scanning answer sheet was provided for recording answers to the questions. The questionnaires were mailed during December 1972. Sixty-five percent of the officers and fifty percent of the enlisted personnel contacted participated in the survey.

TABLE 1

Subgroups from the NSS 72-1 Sample

Subgroup	OFFICER		ENLISTED	
	Original Sample	Adjusted Sample	Original Sample	Adjusted Sample
Black Women	33	--	37	--
Black Men	290	--	578*	251
White Women	503	--	340	--
White Men	1325*	671	1166*	487

*These groups were subsampled in order to make them representative by paygrade groups.

TABLE 2
Subgroups from the WIN Survey

Subgroup	OFFICER	ENLISTED
Black Women	30	99
Black Men	80	131
White Women	143	115
Random Sample	475	452
White Men*	450	395

*The White Men subgroups were selected from within the random samples.

STUDY I

Discrimination and Attitudes Toward Women in the Navy

Background

The data analyzed for this investigation deal primarily with reports of discrimination and stereotyped, prejudicial attitudes. There are two social-psychological models which appear to be useful in explicating the salient factors and concepts in such phenomena: stratification, and prejudice and ethnic relations.

Stratification. Stratification has been defined by Berelson and Steiner (1964) as "the ranking of people in a society, by other members of the society, into higher and lower social positions so as to produce a hierarchy of respect or prestige [p. 453]." Relative status within a group is determined by the possession of characteristics which have social value. In many societies these valued characteristics are seniority, maleness, nobility, education, income, and positions of formal authority (Brown, 1965). Higher status is then associated with greater influence, control and power. According to Brown (1965), there is a rank according to sex within our society: "In spite of American distaste for abscribing status, there remains a difference of rank between male and female. It is a little better to be male than female [pp. 161-162]."

"The unequal distribution of rewards usually spurs lower-placed individuals and groups to try to increase their share [Berelson & Steiner, 1964, p. 463]." This is exemplified in the womens-rights movement. Presumably those who are higher-placed (i.e., men) will attempt to preserve their position. This could lead to a certain type of conflict between men and women as they compete for influence and power.

Prejudice and discrimination. The concept of stratification is not distinct from the prejudice and ethnic relations model. Members of "minority" groups tend to have low status. However, there are additional important factors. The two primary concepts in this area are prejudice and discrimination. These are differentiated as an attitudinal and an action concept, respectively. Harding, Proshansky, Kutner, and Chein (1969) defined prejudice as a departure from three ideal norms: rationality, justice, and brotherly love or "human-heartedness." A departure from rationality is evidenced in prejudgment, overgeneralization, and stereotypes. Discriminatory behavior is a departure from the norm of justice, or the societal prescription

that everyone should receive equal treatment except for treatment due to unequal abilities or achievements. Intolerance violates the norm of human-heartedness which indicates that others should be accepted in terms of their common humanity. While prejudice can be viewed as violating certain norms, prejudice may itself be normative. That is, members of certain groups are expected to hold certain attitudes toward other groups.

While women do not constitute an ethnic group or a numerical minority, men can be identified as a dominant group. On the basis of an historical analysis of dominant-subordinate group relations, Harding et al. (1969) reported that

the attitudes of the dominant group toward the subordinate one have usually been friendly so long as the system of economic relations was not challenged, but the attitudes have become hostile whenever the subordinate group attempted to improve its position [p. 31].

Berelson and Steiner (1964) indicated that people not in direct competition with members of minority groups are less likely to be prejudiced toward them. Conflict tends to occur when the situation of the minority group has improved enough for its members to "appreciate the benefits and to want more." These findings suggest that conflict may occur when men and women are in direct competition for scarce resources, e.g., jobs.

Stereotypes are perceptions which tend to support certain kinds of intergroup attitudes. According to Berelson and Steiner (1964), those who feel hostile toward minority groups tend to perceive such feelings as justified by the behavior of the minority group. Harding et al (1969) defined stereotypes as beliefs which are "simple, inadequately grounded, at least partially inaccurate, held with considerable assurance by many people." According to Brown (1965), while the above do represent characteristics of stereotypes, the critical features are not these, but that stereotypes are "ethnocentrically evaluative" and they imply nonexistent inborn characteristics or traits. By "ethnocentrically evaluative" he meant, first, that the traits included in the stereotype are evaluative, i.e., good/bad; and, second, that the other group is evaluated with reference to the standards of the evaluating group. Groups which have differing values or standards of conduct will be unfavorably stereotyped. The latter characteristic of stereotypes is not immediately applicable to male-female attitudes since these groups

presumably have similar values and standards of conduct. The former characteristic is viewed as important in considering male-female relationships. Men and women obviously differ on a number of characteristics. For example, men tend to be physically stronger, tend to score higher on mathematical reasoning tests, and tend to score lower on verbal fluency tests. Such differences may reflect, at least in part, differential experiences (Tyler, 1965). For example, since men are expected to be better in mathematics, girls are given less exposure to opportunities to acquire mathematics training. To assume that such differences reflect in-born biological characteristics is to subscribe to stereotyping.

Harding et al. (1969) identified three major determinants of minority group attitudes: (1) the objective characteristics of the group which is the target of the attitude; (2) the relationship of this group to the group whose attitudes are being investigated; and (3) the characteristics of the group whose attitudes are being investigated. In the context of attitudes toward women in the Navy, these three would represent (1) the actual capabilities of women; (2) the relationship between men and women, e.g., conflict vs cooperation; and (3) characteristics of the persons expressing the attitudes, e.g., education, sex. According to Harding et al. "the most dependable finding" in research on minority group relations has been a negative correlation between prejudice of most kinds and amount of formal education. It is not clear whether this finding would apply equally to attitudes between sex groups.

Amer (1969) reviewed the literature on contact between groups and enumerated those factors which appear to increase prejudice. Clearly, the conditions under which the contact occurs are very important. Those conditions which tend to reduce prejudice are: (1) the members of the two groups have equal status; (2) the minority group member has higher status; (3) the social climate promotes intergroup contact; (4) the contact is intimate rather than casual; (5) the outcome is rewarding; (6) the groups interact in functionally important activities and develop common goals. Those conditions tending to heighten intergroup hostility are (1) the minority group member has lower status; (2) the contact is associated with unpleasant tension; (3) the majority group is in a state of frustration; (4) the contact lowers the status of one of the groups; (5) there is competition between the groups; (6) the groups have moral standards which the other finds objectionable. The situation regarding women in the Navy would appear to have some of each of these sets of factors, although all the items may not apply.

There are obvious limitations to the application of the stratification and the minority group models to male-female groups. For example, an assumed feature of negative intergroup relations is the desire for social distance. There are instances which seem to relate to this in sex relationships, e.g., the all-male club which formally restricts its membership. However, the social distance involved here is minimal compared with the social distance maintained between many groups.

Approach

Most of the analyses in this phase are based upon NSS 72-1 data supplemented in certain cases by data from the WIN survey.

Reports of Discrimination

People feel discriminated against when they perceive themselves to have received unjustifiably inferior treatment. If, however, inferior treatment is perceived as legitimate or justified, then such treatment will not be perceived as discrimination by the individual involved. A distinction must therefore be made between subjective reports of discrimination and objective evidence that discrimination has occurred. The present study does not deal with the latter subject. Within this study the term discrimination will be used to refer to subjective reports.

Analyses were conducted to determine the relative amount of discrimination perceived as a function of sex and race. In analyzing reports by white women of discrimination it is useful to compare these reports to those given by black men and black women, as well as by white men, in order to obtain reference points. A prevalent attitude in U.S. society is that differential treatment on the basis of sex alone is acceptable and proper. This attitude is held both by men and by women. Turner and Turner (1971) found that white women perceived less discrimination against women than did white men. They concluded that white women are less motivated to perceive discrimination because they anticipate less occupational involvement.

A correlation was predicted between women's attitudes toward women and their perceptions of discrimination: those women who hold unfavorable attitudes toward women will not perceive discriminatory treatment as discriminatory.

On the basis of available evidence and theoretical analyses, it was not possible to predict completely the nature of the interaction between the factors of race and sex on reports of discrimination. The relative positions of three of the four groups were predicted:

white women will perceive more discrimination than white men; black men will perceive more discrimination than white women (and more than white men).

The amount of discrimination reported by black women relative to these other groups was less certain. Three possible outcomes were proposed. First, black women might perceive themselves as discriminated against due to their race but not due to their sex. The average amount of discrimination reported by this group would then be the same as for black men. Accepting a certain amount of sexual discrimination as legitimate, black women might perceive a lesser amount of discrimination than that perceived by black men. This appeared the less likely of the alternatives on the basis of the finding by Turner and Turner (1971) that black women perceived more discrimination against women than was perceived by men. The third alternative suggested that women who have been discriminated against for reasons other than sex, i.e., black women, will be especially sensitive to discrimination and will therefore perceive considerably more discrimination than black men.

Whites and males (most particularly, white males) may perceive a kind of "reverse" discrimination. They may view attempts to provide "equal opportunities" for all persons as depriving them of some of their opportunities.

A relationship was predicted, for white men, between negative attitudes toward minorities and reports of perceived discrimination.

Intentions to remain in the Navy or to leave were predicted to be more closely related to feelings of discrimination on the basis of race than on the basis of sex. This prediction was based upon the hypothesis that women are less likely to perceive discrimination and are less likely to react to it than are members of minority groups. An important factor in this relationship is the perception of alternatives. To the extent that discrimination on the basis of sex is generally accepted in a society, it cannot be readily escaped.

Attitudes Toward Women and Toward Minorities

It was predicted that prejudicial, stereotyped attitudes toward women would occur most frequently within the male group and least frequently within the female group, with white men reporting the most prejudiced attitudes and black women the least.

White men who indicate they hold prejudiced attitudes toward minorities were expected to report prejudicial attitudes toward women. The opposite relation, on the other hand, was expected to

be much weaker. It is commonly accepted that women should receive differential treatment, whereas differential treatment is not as widely accepted for minorities. Prejudiced attitudes toward women can be expected to be more likely to occur and more likely to be reported than prejudiced attitudes toward minorities. Using Campbell's (1963) conceptual framework, it could be suggested that prejudiced attitudes toward minorities have a higher threshold. If an individual has reached this threshold (reports of prejudiced attitudes toward minorities) he will have passed the lower one (reports of prejudiced attitudes toward women).

A negative correlation was predicted between prejudice toward women (and toward minorities) and amount of education.

Results

Item Analyses

Since there were several items in the NSS 72-1 questionnaire related to perceptions of women's abilities and several items related to perceptions of discrimination, factor analyses² were performed on these two sets of items. Three factors were identified from the rotated factor matrix (Appendix C) for the ability items: (1) ability to repair complex mechanical or electronic equipment; (2) ability to perform routine administrative or clerical tasks; and (3) abilities required for command or leadership. Each individual was given a score for each of these three groups of items by summing the items within each group. On the basis of the results of the factor analysis of the discrimination items (Appendix C), analyses of these items were done using either the seven items separately or the sum of the seven items.

Reports of Discrimination as a Function of Race and Sex

Analyses of variance were performed for each of the seven items and for the total discrimination scores. A 2X2X2 design was employed in order to assess singly and in combination the effects of race, sex, and officer-enlisted status. The mean for each of the subgroups for each of the items, and for the total scores is presented in Tables 3-10 with the results of the analyses of variance.

The factor of race was found to be significantly related to the responses to each of the discrimination items and to the total scores. In each case the black personnel reported more discrimination than did the white personnel.

²Multiple correlations were used as estimates of communality; orthogonal rotation.

TABLE 3

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Promotion Opportunities

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.22	1.26	1.24
Women	1.15	1.24	1.20
Men	1.23	1.26	1.25
WHITE	1.15	1.13	1.15
Women	1.21	1.16	1.19
Men	1.11	1.11	1.11
WOMEN	1.21	1.17	1.19
MEN	1.15	1.16	1.16
TOTAL	1.17	1.17	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	0.003	0.014
B (sex)	1	0.855	4.023*
C (race)	1	5.734	26.996**
AXB	1	0.371	1.748
AXC	1	0.194	0.911
BXC	1	0.841	3.960*
AXBXC	1	0.156	0.736
Error	2604	0.212	

*p<.05

**p<.01

TABLE 4

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Da'ly Duty Assignments

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.16	1.33	1.24
Women	1.12	1.27	1.20
Men	1.16	1.34	1.25
WHITE	1.12	1.25	1.17
Women	1.20	1.34	1.25
Men	1.06	1.20	1.12
WOMEN	1.19	1.33	1.25
MEN	1.09	1.24	1.16
TOTAL	1.12	1.27	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	14.287	65.034**
B (sex)	1	5.393	24.549**
C (race)	1	3.934	17.907**
AXB	1	0.034	0.156
AXC	1	0.095	0.432
BXC	1	2.133	9.710**
AXBXC	1	0.018	0.083
Error	2604	0.220	

*p<.05

**p<.01

TABLE 5

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Housing Accommodations

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.72	1.56	1.64
Women	1.67	1.54	1.60
Men	1.73	1.56	1.65
WHITE	1.32	1.35	1.33
Women	1.53	1.37	1.46
Men	1.17	1.33	1.24
WOMEN	1.54	1.39	1.48
MEN	1.34	1.41	1.37
TOTAL	1.41	1.40	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	0.055	0.111
B (sex)	1	6.690	13.598**
C (race)	1	60.123	122.202**
AXB	1	6.875	13.974**
AXC	1	8.308	16.887**
BXC	1	3.091	6.282*
AXBXC	1	1.722	3.500
Error	2604	4.920	

*p<.05

**p<.01

TABLE 6

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Attitudes and Treatment by Superiors

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.50	1.54	1.52
Women	1.36	1.54	1.46
Men	1.51	1.54	1.52
WHITE	1.19	1.38	1.27
Women	1.28	1.43	1.34
Men	1.12	1.35	1.21
WOMEN	1.28	1.44	1.35
MEN	1.24	1.41	1.31
TOTAL	1.25	1.42	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	18.161	56.523**
B (sex)	1	1.027	3.196
C (race)	1	31.817	99.026**
AXB	1	0.045	0.141
AXC	1	3.275	10.194**
BXC	1	2.058	6.404*
AXBXC	1	0.701	2.183
Error	2604	0.321	

*p<.05

**p<.01

TABLE 7

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Training Opportunities

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.21	1.28	1.25
Women	1.30	1.24	1.27
Men	1.20	1.29	1.24
WHITE	1.15	1.17	1.16
Women	1.20	1.22	1.21
Men	1.12	1.13	1.12
WOMEN	1.20	1.22	1.21
MEN	1.15	1.18	1.16
TOTAL	1.17	1.20	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	0.604	2.625
B (sex)	1	1.432	6.223*
C (race)	1	5.316	23.102**
AXB	1	0.036	0.156
AXC	1	0.311	1.351
BXC	1	0.191	0.829
AXBXC	1	0.378	1.642
Error	2604	0.230	

*p<.05

**p<.01

TABLE 8

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: On-Base Clubs and Social Activities

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.49	1.50	1.49
Women	1.30	1.54	1.43
Men	1.51	1.50	1.50
WHITE	1.06	1.16	1.10
Women	1.12	1.17	1.14
Men	1.02	1.15	1.07
WOMEN	1.13	1.20	1.16
MEN	1.17	1.27	1.21
TOTAL	1.15	1.24	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	5.315	24.935**
B (sex)	1	1.289	6.045*
C (race)	1	70.975	332.954**
AXB	1	0.088	0.415
AXC	1	0.900	4.223*
BXC	1	1.053	4.940*
AXBXC	1	1.437	6.743**
Error	2604	0.213	

*p<.05

**p<.01

TABLE 9

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Attitudes of Navy Personnel

Subgroup	Officer	Enlisted	TOTAL
BLACK	1.83	1.75	1.79
Women	1.61	1.65	1.63
Men	1.86	1.77	1.82
WHITE	1.18	1.37	1.26
Women	1.33	1.56	1.42
Men	1.07	1.24	1.14
WOMEN	1.35	1.56	1.44
MEN	1.31	1.42	1.36
TOTAL	1.32	1.47	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	13.242	41.095**
B (sex)	1	4.476	13.890**
C (race)	1	154.418	479.231**
AXB	1	1.624	5.040*
AXC	1	7.083	21.982**
BXC	1	12.337	38.287**
AXBXC	1	0.070	0.217
Error	2604	0.322	

*p<.05

**p<.01

TABLE 10

Mean Discrimination Scores for Race, Sex, and Officer-
Enlisted Groups: Sum of Seven Items

Subgroup	Officer	Enlisted	TOTAL
BLACK	10.13	10.23	10.18
Women	9.52	10.03	9.79
Men	10.20	10.26	10.23
WHITE	8.18	8.80	8.44
Women	8.86	9.25	9.02
Men	7.67	8.49	8.02
WOMEN	8.90	9.33	9.08
MEN	8.43	9.10	8.72
TOTAL	8.60	9.17	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	209.489	37.790**
B (sex)	1	81.428	14.689**
C (race)	1	1675.197	302.192**
AXB	1	8.074	1.457
AXC	1	48.955	8.831**
BXC	1	111.207	20.061**
AXBXC	1	10.622	1.916
Error	2604	5.543	

*p<.05

**p<.01

The factor of sex was significantly related to reports of discrimination for the total scores and for each of the items except "Attitudes and treatment by superiors." In each case the mean score for the women exceeded that for the men except for "On-base clubs and social activities."

The interaction between the factors of race and sex was found to be significant for all the items except "Training opportunities." For this one item the effects of the factors of race and sex were additive: black women received the highest mean score. However, for the other six items and for the total scores, while the mean for white women was higher than the mean for white men, the black men received higher mean scores than did the black women.

The factor of enlisted-officer status was significantly related to the mean discrimination scores for "Daily duty assignments," "Attitudes and treatment by superiors," "On-base clubs and social activities," "Attitudes of Navy personnel," and for the total scores. In each case the mean score for the enlisted personnel was higher than the mean score for the officers.

There was a significant interaction between the factors of race and officer-enlisted status for "Housing accommodations," "Attitudes and treatment by superiors," "On-base clubs and social activities," "Attitudes of Navy personnel," and for the total scores. While the mean score for blacks was higher than the mean score for whites, and the mean score for enlisted personnel was higher than the mean score for officers, the mean for black officers exceeded that for black enlisted personnel in the area of housing. For the other three areas, and for the total scores, the means for the black enlisted personnel did not differ from those for the black officers.

In the areas of "Housing accommodations," and "Attitudes of Navy personnel", there was a significant interaction between the factors of sex and officer-enlisted status. While the mean for women was greater than the mean for men, in the area of housing this was true for officers only. The mean for the enlisted women and the mean for the enlisted men did not differ. In the area of "Attitudes of Navy personnel", the interaction was due to the lack of a difference between the means for the women officers and the men officers.

There was a significant three-way interaction for the item "On-base clubs and social activities". The interaction between sex and race was found to be different for enlisted and for officer personnel.

The mean score for black enlisted women was greater than the mean for black enlisted men; the mean for black men officers was greater than the mean for the black women officers.

In the Women in the Navy survey the discrimination questions were repeated. However, in the latter survey, an attempt was made to determine the perceived basis for the reported discrimination. White women who reported discrimination tended to choose sex as the basis for the discrimination. Black women tended to choose both race and sex, whereas black men most frequently chose race as the basis for perceived discrimination. White men tended to cite "rank/rate/designator" (Tables 11-17).

There was no relationship between women's attitudes toward women and their perceptions of discrimination. The predicted negative relationship between attitudes toward minorities and reports of discrimination of the part of white men was not observed.

The correlation between career intentions and total discrimination scores (in the WIN survey) was negative for all subgroups but was significant only for white enlisted men ($r = -.269$, $df = 394$, $p < .01$), black enlisted men ($r = -.223$, $df = 130$, $p < .05$), and white men officers ($r = -.131$, $df = 449$, $p < .01$). Very similar results were observed in the NSS 72-1 data. The correlation coefficients between these two variables for these 3 groups were $-.25$ ($df = 486$, $p < .01$), $-.19$ ($df = 250$, $p < .01$) and $-.12$ ($df = 670$, $p < .05$), respectively.

The responses to each discrimination item and the career intention item in the NSS 72-1 survey were cross-tabulated and chi-square analyses were performed. A significant relationship was found for all items only for the white enlisted men. For three groups there was no relationship for any area of discrimination: black men officers, black women officers, and black enlisted women. For white men officers there was a significant relationship in the areas of daily duty assignments ($\chi^2 = 14.24$, $df = 2$, $p < .01$), housing ($\chi^2 = 10.82$, $df = 2$, $p < .01$), treatment by superiors ($\chi^2 = 25.81$, $df = 2$, $p < .01$), and attitudes of Navy personnel ($\chi^2 = 21.52$, $df = 2$, $p < .01$). For black enlisted men there was a significant relationship in the areas of daily duty assignments ($\chi^2 = 26.63$, $df = 2$, $p < .01$), treatment by superiors ($\chi^2 = 9.27$, $df = 2$, $p < .01$), and training opportunities ($\chi^2 = 10.24$, $df = 2$, $p < .01$). Reported discrimination in the area of treatment by superiors was significantly related ($\chi^2 = 19.24$, $df = 2$, $p < .01$) to career plans for white enlisted women. In each of these cases, among those reporting discrimination, fewer reported intending to stay in the Navy and more reported intending to leave than among those reporting no discrimination. For white women

TABLE 11

PERCEIVED BASIS FOR DISCRIMINATION IN PROMOTION OPPORTUNITIES

	OFFICER				ENLISTED			
	Non-White Women		Non-White Men		Non-White Women		Non-White Men	
	100%	Random Sample	100%	Random Sample	100%	Random Sample	100%	Random Sample
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN PROMOTION OPPORTUNITIES								
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	79	76	77	82	85	80	73	86
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA								
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:								
AGE	1		1	2			2	1
RACE/ETHNIC GROUP		10	13	1		3	11	1
SEX	7	5			3	3		
PHYSICAL CHARACTERISTICS			1		1	1	1	1
MARITAL STATUS	1			1	1	1	1	
RANK/RATE/DESIGNATOR	1	2	3	7	2	4	2	5
EDUCATION/TRAINING/EXPERIENCE	8	7	3	6	5	6	3	3
OTHER	2		3	2	4	2	8	3

TABLE 12

PERCEIVED BASIS FOR DISCRIMINATION IN WORK ASSIGNMENTS

	OFFICER				ENLISTED			
	Non-White Women		Non-White Men		Non-White Women		Non-White Men	
	White Women 100%	White Women 100%	White Men 100%	White Men 100%	White Women 100%	White Women 100%	White Men 100%	White Men 100%
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN WORK ASSIGNMENTS								
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	78	60	72	84	60	59	69	86
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA								
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:								
AGE	1			2	1			
RACE/ETHNIC GROUP		12	16			9	12	2
SEX	11	14	1		23	15		
PHYSICAL CHARACTERISTICS							1	1
MARITAL STATUS	1		1	1			1	
RANK/RATE/DESIGNATOR	5	12	7	6	8	11	9	7
EDUCATION/TRAINING/EXPERIENCE	1	2	3	5	5	1	4	2
OTHER	3		1	2	4	5	5	2

TABLE 13

PERCEIVED BASIS FOR DISCRIMINATION IN HOUSING ACCOMMODATIONS

	OFFICER					ENLISTED				
	White Women 100%	Non-White Women 100%	White Men 100%	Non-White Men 100%	Random Sample 100%	White Women 100%	Non-White Women 100%	White Men 100%	Non-White Men 100%	Random Sample 100%
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN HOUSING ACCOMMODATIONS										
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	61	56	56	81	65	71	67	76		
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA										
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:										
AGE				3						
RACE/ETHNIC GROUP		27	26			9	19	1		
SEX	15	7	1		11	7				
PHYSICAL CHARACTERISTICS										
MARITAL STATUS	23	10	7	9	6	4	2	5		
RANK/RATE/DESIGNATOR	1		8	8	11	4	8	14		
EDUCATION/TRAINING/EXPERIENCE			1		1					
OTHER	1		1	2	3	5	4	3		

TABLE 14

PERCEIVED BASIS FOR DISCRIMINATION IN TREATMENT BY SUPERIORS/SUPERVISORS

	OFFICER						ENLISTED			
	Non-White Women			Non-White Men			Non-White Women		Non-White Men	
	100%	100%	Random Sample	100%	100%	Random Sample	100%	100%	100%	Random Sample
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN TREATMENT BY SUPERIORS/SUPERVISORS										
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	80	69	89	68	77	66	62	79		
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA										
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:										
AGE	1							1		
RACE/ETHNIC GROUP		19	23			15	24	3		
SEX	6	10			16	24				
PHYSICAL CHARACTERISTICS	1					1	1	1		
MARITAL STATUS	2		1		1	1	1			
RANK/RATE/DESIGNATOR	4	2	6	3	4	10	7	8		
EDUCATION/TRAINING/EXPERIENCE	4		2	3	1	2	2	3		
OTHER	3		2	3	3	2	4	5		

TABLE 15

PERCEIVED BASIS FOR DISCRIMINATION IN TRAINING OPPORTUNITIES

	OFFICER					ENLISTED				
	Non-White Women		Non-White Men		Random Sample	Non-White Women		Non-White Men		Random Sample
	100%	100%	100%	100%		100%	100%	100%	100%	100%
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN TRAINING OPPORTUNITIES										
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	80	69	74	86		82	72	73		86
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA										
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:										
AGE	1			1		1		1		2
RACE/ETHNIC GROUP		5	10				4	6		1
SEX	10	12				16	6			
PHYSICAL CHARACTERISTICS										
MARITAL STATUS	1	2						1		
RANK/RATE/DESIGNATOR	6	12	9	7			6	8		4
EDUCATION/TRAINING/EXPERIENCE	1		4	5		1	8	6		4
OTHER	2		3	1		1	4	6		3

TABLE 16

PERCEIVED BASIS FOR DISCRIMINATION IN ON-BASE CLUBS AND SOCIAL ACTIVITIES

	OFFICER				ENLISTED			
	Non-White Women		Non-White Men		Non-White Women		Non-White Men	
	White Women 100%	Non-White Women 100%	White Men 100%	Non-White Men 100%	White Women 100%	Non-White Women 100%	White Men 100%	Non-White Men 100%
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN ON-BASE CLUBS AND SOCIAL ACTIVITIES								
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	92	76	71	94	81	72	65	87
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA								
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:								
AGE	1	2		1	3		1	1
RACE/ETHNIC GROUP		12	22	1	1	16	24	3
SEX	3	5	1		8	1		
PHYSICAL CHARACTERISTICS		2					1	
MARITAL STATUS	3		3	1	1		1	
RANK/RATE/DESIGNATOR	1	2	2	2	4	8	4	7
EDUCATION/TRAINING/EXPERIENCE								
OTHER			3	1	3	3	5	2

TABLE 17

PERCEIVED BASIS FOR DISCRIMINATION IN ATTITUDES OF NAVY PERSONNEL

	OFFICER				ENLISTED			
	Non-		Non-		Non-		Non-	
	White Women 100%	White Women 100%	White Men 100%	Random Sample 100%	White Women 100%	White Men 100%	White Men 100%	Random Sample 100%
INDICATE WHETHER YOU FEEL YOU ARE OR ARE NOT DISCRIMINATED AGAINST IN THE NAVY IN THE ATTITUDES OF NAVY PERSONNEL								
I AM NOT DISCRIMINATED AGAINST IN THIS AREA	73	52	50	87	62	53	46	81
I FEEL THAT I AM DISCRIMINATED AGAINST IN THIS AREA								
THE PRIMARY BASIS FOR THE DISCRIMINATION IS:								
AGE			2	1	2		3	1
RACE/ETHNIC GROUP		29	41	1		23	38	3
SEX	20	10		1	30	10		
PHYSICAL CHARACTERISTICS		2	1	1				1
MARITAL STATUS	1	2	1	1	2	3	1	
RANK/RATE/DESIGNATOR	4	2	3	6	2	4	6	8
EDUCATION/TRAINING/EXPERIENCE	1		1	1		2	2	2
OTHER	2	2	2	3	3	5	4	4

officers there was a significant relation ($\chi^2=7.665$, $df=2$, $p<.05$) between career intentions and discrimination in the area of attitudes of Navy personnel which was consistent with this pattern. However, in the area of promotion opportunities, the significant relationship ($\chi^2=9.27$, $df=2$, $p<.01$) was reversed: among those reporting discrimination more reported intending to stay (56%) and fewer reported intending to leave (9%), than among those reporting no discrimination in this area (42% stay; 22% leave).

This reverse relationship between perceived discrimination in promotion opportunities and career plans might be due to greater concern about promotion opportunities among those women who are more committed to a career in the Navy. To investigate this, the responses of the white women officers were compared to those of the white enlisted men. Among the white women officers intending to stay in the Navy, 22% reported discrimination in promotion opportunities. Among those white women officers planning to leave the Navy, 8% reported discrimination in this area. Five percent of the white enlisted men intending to stay, and 14% of the white enlisted men intending to leave, reported discrimination in promotion opportunities.

Attitudes Toward Women

Analyses of variance were performed for each of the three groups of ability items in the NSS 72-1 (Appendix C). A 2x2x2 design was employed in order to assess singly and in combination the effects of race, sex, and officer-enlisted status on the responses to these items. The means for each of the subgroups for each of these sets of items are presented in Tables 18-20 with the results of the analyses of variance.

Only the factor of sex was found to be significantly related to opinions of women's ability to command. The factors of race and sex were found to significantly interact for this area due to a higher mean score for white women than for black women. There was no significant difference between white men and black men.

Both sex and officer-enlisted status were related to opinions regarding women's electronic/mechanical ability. The mean for women was higher than the mean for men and the mean for officers was higher than the mean for enlisted personnel.

In the area of women's clerical/administrative ability the mean score for the black officers was higher than the mean for the black enlisted personnel, but there was no difference between the white officers and the white enlisted personnel.

TABLE 18

Mean Scores for Ability to Command For
Race, Sex, and Officer-Enlisted Groups

Subgroup	Officer	Enlisted	TOTAL
BLACK	27.45	26.96	27.22
Women	27.70	28.78	28.27
Men	27.42	26.69	27.08
WHITE	28.30	28.25	28.28
Women	30.26	30.38	30.31
Men	26.84	26.77	26.81
WOMEN	30.10	30.22	30.15
MEN	27.01	26.74	26.90
TOTAL	28.12	27.92	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	25.131	0.925
B (sex)	1	6284.023	231.359**
C (race)	1	1.860	0.068
AXB	1	22.087	0.813
AXC	1	26.758	0.985
BXC	1	292.826	10.781**
AXBXC	1	36.184	1.332
Error	2604	27.161	

*p<.05

**p<.01

TABLE 19

Mean Discrimination Scores for Electronic/Mechanical Ability
for Race, Sex, and Officer-Enlisted Groups

Subgroup	Officer	Enlisted	TOTAL
BLACK	6.31	5.83	6.08
Women	6.15	5.95	6.04
Men	6.32	5.81	6.09
WHITE	6.28	6.17	6.24
Women	6.44	6.42	6.43
Men	6.17	5.99	6.09
WOMEN	6.42	6.37	6.40
MEN	6.22	5.93	6.09
TOTAL	6.29	6.08	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	28.208	8.625**
B (sex)	1	55.500	16.970**
C (race)	1	1.212	0.371
AXB	1	7.802	2.386
AXC	1	11.328	3.464
BXC	1	7.392	2.260
AXBXC	1	0.319	0.098
Error	2604	3.270	

*p<.05

**p<.01

TABLE 20
Mean Scores for Clerical/Administrative Ability
for Race, Sex, and Officer-Enlisted Groups

Subgroup	Officer	Enlisted	TOTAL
BLACK	8.42	8.14	8.29
Women	7.85	8.27	8.07
Men	8.48	8.12	8.31
WHITE	8.41	8.61	8.49
Women	8.34	8.83	8.54
Men	8.46	8.45	8.46
WOMEN	8.31	8.77	8.50
MEN	8.47	8.34	8.41
TOTAL	8.41	8.49	

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	df	MS	F
A (officer-enlisted)	1	3.751	2.323
B (sex)	1	4.959	3.071
C (race)	1	16.390	10.150**
AXB	1	50.995	31.580**
AXC	1	10.770	6.669**
BXC	1	7.411	4.590*
AXBXC	1	1.035	0.641
Error	2604	1.615	

*p<.05

**p<.01

There was a significant interaction between the factors of sex and officer-enlisted status for the administrative/clerical area. Enlisted women had a higher mean than enlisted men; however, the mean for officer men was greater than the mean for officer women.

For two of the groups of men there was a significant, but small, relationship between education and opinion toward women's ability to command: white men officers ($r=.14$, $df=670$, $p<.01$); black men officers ($r=.18$, $df=289$, $p<.01$). There was no relationship between education and opinion of women's ability to command for any of the subgroups of women.

There was a significant, though small, relationship between education and attitudes toward minorities for white men officers ($r=.23$, $df=670$, $p<.05$). There was no relationship for white enlisted men, white women officers, or white enlisted women.

The relationship predicted for white men between attitudes toward minorities and attitudes toward women was found only for officers. Of those officers whose attitudes toward women were unfavorable, 25% expressed attitudes negative to minorities; of those negative to minorities, 39% expressed attitudes negative to women. Of the enlisted personnel who reported negative attitudes toward women, 36% expressed negative attitudes toward minorities; of those reporting negative attitudes toward minorities, 37% reported negative attitudes toward women.

Discussion

More discrimination was reported by enlisted, women, and black personnel relative to officer, men, or white personnel, respectively. However, it was not generally the case that black enlisted women most strongly perceived themselves as discriminated against. In six of the seven areas investigated, black men reported more discrimination than did black women. These results suggest that there is more discrimination perceived on the basis of race than of sex.

White enlisted personnel were more likely to report discrimination than were white officers. However, with the exception of housing, black officers tended to report as much discrimination as was reported by the black enlisted group. Black officers reported more discrimination in the area of housing than did black enlisted personnel.

"On-base clubs and social activities" is an area in which women might be expected to report little discrimination. This was true for white women, but not for black women. Black enlisted women reported as much discrimination in this area as was reported by black enlisted men.

It was predicted that there would be a less strong relationship between perceived discrimination and career plans for white women than for the black groups. The unexpected finding was that the relationship appeared to be the strongest for white enlisted men. It was suggested that women might see no alternatives which would be better than the Navy in regard to discrimination. This may be nearly equally true for black personnel. White enlisted men, on the other hand, may be more likely to perceive alternatives which offer less discrimination.

The relationship for white women officers between discrimination in promotion opportunities and career plans was the reverse of that generally observed. This is explained as being due to a lack of concern about promotion opportunities among those women who are less committed to a career in the Navy.

The difference between men officers and enlisted men in the relationship between attitudes toward minorities and toward women may indicate that only officers are particularly concerned about the acceptability of their expressed opinions. In other words, enlisted men may feel more free to express negative opinions regarding minorities as well as regarding women.

Women were found to hold more favorable opinions than men toward women's abilities in the areas of command and electronic/mechanical ability. Women were perceived as more capable in the electronic/mechanical area by officers than by enlisted personnel, with women officers holding more favorable opinions than enlisted women, men officers or enlisted men.

Interpretation of the results for the administrative/clerical area must take into account that these tasks are generally considered to be "woman's work." It is not necessarily unfavorable toward women to say they are more capable in this area, especially since women frequently have had more relevant experience. However, particularly with reference to expanding the role of Navy women, the opinion that women are more capable in this area cannot be considered to be favorable since it tends to reinforce traditional roles. In this area the most favorable view regarding women's abilities was expressed by black women officers, the least favorable by white enlisted women.

Black enlisted women and white women officers expressed relatively favorable opinions. The most favorable opinion expressed by the men subgroups was that of the black enlisted men.

Opinions regarding women's ability to command were related to level of education for the men officers but not for the enlisted men. This is interpreted to mean that only at graduate levels does education influence opinions regarding the ability of women.

Conclusions and Recommendations

Women in the Navy perceive themselves to be discriminated against relative to men. However, both white women and black women report less discrimination than do black men. Black women report discrimination both on the basis of sex and on the basis of race. Yet the total amount reported generally is less than the amount reported by black men on the basis of race.

Attempts to improve these perceptions would require an investigation into the degree to which they are veridical. If objective evidence of discrimination is found then steps can be taken to eliminate it. Reducing inaccurate perceptions would require educational and/or counseling efforts.

It would be useful to determine to what extent the capabilities of women are viewed with reference to training and background. The judgments reported here reflect opinions of women's abilities relative to men. While men and women tend to see men as more capable in electronic/mechanical ability and the ability to command, this does not mean that women are viewed as incapable in these areas. Opinions as to what women can and cannot do should be assessed. Efforts to improve these opinions should include women as well as men. It would be of interest to determine to what extent opinions expressed by women regarding the ability of women in general reflect the individual women's perceptions of their own abilities.

STUDY II

Attitudes Toward the Role of Women in the Navy: Scale Development

Background

Attitude is typically defined as a "predisposition to respond in a particular way toward some particular class of stimuli, [Rosenberg & Hovland, 1960, p. 2]." Rosenberg and Hovland suggested that this definition be changed to a "set of predispositions to respond...." Within this "set" they defined three major components: affective, cognitive, and behavioral. The affective component refers to feelings of liking or disliking or evaluative reactions. The cognitive component refers to perceptions and beliefs. The "common hypothesis" from consistency theories of attitude change is that changes in cognitions will result in changes in affective and behavioral components. This hypothesis underlies attempts to use persuasion as a means of attitude change. This hypothesis, in turn, is based upon the underlying assumption that these various components are "organized in congruence with one another, [Rosenberg & Hovland, 1960, p. 11]."

Applying this theoretical distinction to attitudes regarding Navy women, the cognitive and the affective components are identified, respectively, as (1) beliefs about women's characteristics and abilities; (2) feelings about the "proper" characteristics and behaviors for women. For example, one person might be convinced that women are capable of being expert mechanics and yet believe that women should not be mechanics. A second person might be convinced that women are not capable of being mechanics. If this perception were to change, he would have no objection to a proposal that women become mechanics. A third person might believe that women are not capable and feel that they should not be mechanics. Even if he were to change his perception regarding the ability of women, he would still be opposed to a proposal that women become mechanics. Within the consistency theory framework this would be interpreted to indicate that these three persons have different attitudes. Attempts to change their attitudes should utilize a different approach in each case.

Various approaches to attitude change have been reviewed by McGuire (1969). Of relevance to the current research topic are persuasive communications, social influence, exposure, and "forced compliance." Typically, persuasive communications are intended to affect individual's perceptions by giving them information contradictory to their previously held opinions. Social influence has been used to refer to attempts to change attitudes via conformity or identification processes. Exposure to the attitude

object is expected to affect attitudes, particularly for those whose negative attitudes may have limited their experience with the object, by providing information about the attitude object. "Forced compliance"³ refers to the situation in which a person is induced to behave in a manner consistent with the new attitude which it is intended he should adopt. Use of this procedure assumes that the individual, in an attempt to restore consistency among his perceptions, his affect and his behavior, will change his perceptions and affect to accord with the behavior he has been induced to emit.

These approaches can be applied to the example regarding attitudes toward women becoming mechanics. An individual who is opposed because he perceives them as incapable might change this perception if credible communications provided contrary information, or if he were exposed to a competent performance by a woman mechanic.

In dealing with the case in which the person perceives women as competent in this area but feels they should not be mechanics, it might be more effective to utilize social influence or forced compliance techniques. For the person who is opposed for both reasons it would be better to try a combination of methods such as persuasive communication with social influence.

Role theory contains a set of explanatory concepts that appear to be useful in understanding why certain behaviors are considered to be ones women ought to perform while others are not. Social role has been defined by Brown (1965) as a "set of prescriptive rules, guides to behavior, for persons of a given category [p. 172]." There are differing expectations in regard to the appropriate behaviors for individuals in different roles. These differing expectations can produce inter-role conflict when one person simultaneously occupies two or more positions which have incompatible role expectations (Sarbin and Allen, 1968). Certain actions and qualities are expected of persons occupying the (ascribed) status of "woman." Another set of actions and qualities are expected of persons occupying the (achieved) status of various positions in the Navy such as "commanding officer". To the extent that these two sets of expectations are incompatible for a given person, he will reject the concept "woman C.O." It is important to note, first, that he might believe that a woman is capable of being a C.O. In addition, this person need not have a negative attitude toward women (nor toward C.O.'s) in order to be very negative toward the concept "woman C.O." For him, the combined concept "woman C.O." is incongruous.

³The term "forced compliance" is not to be interpreted literally. The individual must feel that he has some choice in performing the act. Therefore, the compliance is induced, not "forced".

Approach

All of the data included in the analyses for this study were obtained from the WIN survey. The analyses were done using either the random sample of enlisted personnel and the random sample of officer personnel, or the entire sample. The item analyses were done using the random samples in order to derive maximally generalizable results.

Perceptions of Ability vs Preferred Role

Correlations were computed between the items measuring perceptions of women's abilities and the items asking about attitudes toward expanding the role of Navy women. In addition, the distributions for these two kinds of items were cross-tabulated in order to determine the relative frequency of combinations of positive and negative positions on each of the two distributions.

Evaluation of Items

There are a number of techniques and standards which have been applied in attempts to develop instruments for measuring attitudes (Scott, 1968). The primary criterion employed in these analyses is that of consistency within a set of items which are intended to measure the same underlying attribute. This was assessed through analysis of the item-total correlations and through factor analyses.

Grouping of Items. The abilities items were grouped into two sets (Appendix B). This was done primarily because the mode of response was different in each case (i.e., agree/disagree vs men/women more capable). In addition, the content of the two sets is somewhat distinct. The first set primarily deals with women's supervisory ability. The second set is more diverse.

Three of the role items were considered separately from the others. Again, this was done primarily because of a difference in response mode.

Results

Perceived Ability vs Role

Responses to the two sets of items pertaining to the abilities of women were compared to the responses to three items pertaining to the preferred role for Navy women: attitude toward Z-116, attitude toward women serving on board ship, and opinion regarding the primary

role for women in the Navy. Correlations were computed for each of the two random samples between the abilities items and these three role items. These correlations are displayed in Table 21. The item pertaining to the difficulty women have in dealing with women in subordinate positions, and the clerical and administrative ability items, tended not to correlate with these role items. However, each of the other items and the total ability scores were significantly related to the role items. The relative frequency of combinations of positive and negative opinions regarding ability and role was determined for the total sample. There was a significant relationship between the total ability scores and the three role items (Table 22-24). Those who held positive opinions about women's abilities were more likely to endorse the new roles than were those who held negative opinions about women's abilities. Most of those who responded in a negative direction to the new roles expressed negative (or neutral) opinions regarding the ability of women. A more specific comparison was made between the item asking about women's ability to serve aboard ship and the item asking whether women should serve aboard ship (Table 23). In this specific comparison, as in the more general ones described above, there was a strong relationship between the two kinds of items. Most (73%) of those who were opposed expressed negative opinions about women's ability for such duty. Most (85%) of those who were in favor expressed positive opinions in regard to the ability question.

Most persons were either negative on both issues or positive on both. Very few were negative on one and positive on the other. Thus, while it is theoretically possible for persons to be negative on one issue and positive on the other, in this sample very few were, at least for these sets of items.

Evaluation of Items

Factor Analyses. Factor analyses were performed for the random sample of officers and for the random sample of enlisted personnel for the ability, the role, the acceptance items, and the items asking about personal preferences in working with, for or supervising men/women. The items included in each of these analyses and the rotated factor matrices are presented in Tables 25-32.

All of the items regarding the acceptance of Navy women were scored in the same way. It was not possible, a priori, to determine which response would be positive with regard to the status of women in the Navy. Inspection of the correlation matrix indicates that endorsement of the first and the last items in this set, pertaining to education regarding the role of women and the need of men to feel superior, reflect a negative position relative to endorsement

TABLE 21

Correlations Between Ability Items and Three Role Items

Item	Attitude Toward Z-116		Attitude Toward Shipboard Duty For Women		Attitude Regarding Primary Role For Women	
	OFFICER	ENLISTED	OFFICER	ENLISTED	OFFICER	ENLISTED
Abilities I						
Competing with men	0.432	0.524	0.400	0.330	0.229	0.218
Exercising authority	0.431	0.394	0.365	0.270	0.216	0.137
Dealing with men in subordinate positions	0.210	0.254	0.224	0.203	0.138	0.147
Dealing with women in subordinate positions	0.159	0.046*	0.057*	0.050*	0.053*	-0.022*
Stand stress and strain at management level	0.531	0.419	0.372	0.265	0.340	0.193
Work at sea	0.585	0.595	0.591	0.525	0.396	0.320
Command ashore	0.509	0.187	0.339	0.106	0.297	0.037*
Command at sea	0.537	0.358	0.484	0.403	0.314	0.187
Manager/subordinate relationships	0.467	0.428	0.334	0.270	0.296	0.221

TABLE 21 (Cont.)

Correlations Between Ability Items and Three Role Items

Item	Attitude Toward Z-116		Attitude Toward Shipboard Duty For Women		Attitude Regarding Primary Role For Women	
	OFFICER	ENLISTED	OFFICER	ENLISTED	OFFICER	ENLISTED
Giving orders	0.466	0.444	0.341	0.256	0.281	0.184
Abilities II						
Dependability	0.256	0.254	0.179	0.132	0.128	0.174
Repair complex mechanical equipment	0.242	0.214	0.256	0.239	0.122	0.264
Repair complex electronic equipment	0.220	0.132	0.196	0.128	0.108	0.203
Inspire confidence	0.386	0.281	0.321	0.167	0.199	0.116
Routine administrative tasks	0.164	-0.040*	0.144	-0.051*	0.094	0.092*
Make a decision and stick with it	0.411	0.323	0.299	0.210	0.268	0.131
Leadership	0.442	0.411	0.418	0.307	0.334	0.228
Control emotions	0.401	0.236	0.312	0.241	0.222	0.138

TABLE 21 (Cont.)
Correlations Between Ability Items and Three Role Items

Item	Attitude Toward Z-116		Attitude Toward Shipboard Duty For Women		Attitude Regarding Primary Role For Women	
	OFFICER	ENLISTED	OFFICER	ENLISTED	OFFICER	ENLISTED
Analyze information and facts	0.299	0.296	0.253	0.246	0.193	0.175
Operate under pressure	0.511	0.274	0.380	0.336	0.299	0.249
Clerical tasks	0.181	-0.020*	0.146	0.033*	0.131	0.090*
One's duties in general	0.398	0.258	0.265	0.141	0.221	0.127

* $p > .05$

TABLE 22

Attitude Toward Z116 as a Function of Opinions of
Women's Abilities

Item	Attitude toward Z116		
	Opposed	Neutral	In Favor
Total Score			
Abilities I			
Negative (10-25)	98 (52%)	64 (24%)	39 (3%)
Neutral (26-35)	78 (41%)	168 (62%)	588 (52%)
Positive (36-50)	13 (7%)	39 (14%)	505 (45%)
TOTAL	189(100%)	271(100%)	1132(100%)
chi square = 446.61, df = 4, p < .01			
Total Score			
Abilities II			
Negative (12-30)	106 (56%)	88 (32%)	146 (13%)
Positive (31-60)	83 (44%)	183 (68%)	980 (87%)
TOTAL	189(100%)	271(100%)	1126(100%)
chi square = 205.23, df = 2, p < .01			

TABLE 23

Attitude Toward Shipboard Duty for Women as a Function
of Opinions of Women's Abilities

Item	Attitude toward Shipboard Duty for Women		
	Opposed	Neutral	In Favor
Total Score			
Abilities I			
Negative (10-25)	114 (39%)	66 (7%)	20 (5%)
Neutral (26-35)	143 (48%)	458 (50%)	130 (35%)
Positive (36-50)	39 (13%)	398 (43%)	223 (60%)
TOTAL	296(100%)	922(100%)	373(100%)
chi square = 296.45, df = 4, p < .01			
Total Score			
Abilities II			
Negative (12-30)	130 (44%)	173 (19%)	37 (10%)
Positive (31-60)	156 (56%)	749 (81%)	336 (90%)
TOTAL	296(100%)	922(100%)	373(100%)
chi square = 124.545, df = 2, p < .01			
Opinion Regarding			
Ability for Ship-			
board Duty			
Negative	216 (73%)	241 (26%)	27 (7%)
Neutral	33 (11%)	152 (17%)	30 (8%)
Positive	45 (15%)	528 (57%)	316 (85%)
TOTAL	294(100%)	921(100%)	373(100%)
chi square = 407.67, df = 4, p < .01			

TABLE 24

Attitude Toward Primary Role for Women as a Function
of Opinion Regarding Women's Abilities

Item	Attitude Toward Primary Role		
	Traditional	Moderate	Expanded
Total Score Abilities I			
Negative (10-25)	74 (29%)	25 (37%)	81 (7%)
Neutral (26-35)	150 (58%)	28 (42%)	608 (51%)
Positive (36-50)	33 (13%)	14 (21%)	503 (42%)
TOTAL	257(100%)	67(100%)	1192(100%)
chi square = 182.76, df = 4, p < .01			
Total Score Abilities II			
Negative (12-30)	105 (41%)	29 (43%)	179 (15%)
Positive (31-60)	152 (59%)	38 (57%)	1010 (85%)
TOTAL	257(100%)	67(100%)	1189(100%)
chi square = 107.907, df = 2, p < .01			

TABLE 25

Rotated Factor Matrix for Acceptance Items: Officer and Enlisted

Acceptance Items	OFFICER			ENLISTED		
	Factor			Factor		
	1	2	3	1	2	3
Effort to Educate Personnel	<u>-0.328</u>	-0.026	-0.297	-0.028	-0.034	-0.247
Career Development Patterns	<u>0.651</u>	0.201	0.128	<u>0.582</u>	0.101	0.142
Enlisted Women Accepted by Enlisted Men	0.134	<u>0.483</u>	0.043	0.177	<u>0.467</u>	0.136
No Discrimination on the Basis of Sex	<u>0.581</u>	0.297	0.118	<u>0.431</u>	<u>0.535</u>	0.107
Woman Officer's Value to the Navy	0.200	<u>0.370</u>	0.333	0.096	<u>0.455</u>	-0.039
Opportunities to Develop Individual Capabilities	<u>0.600</u>	0.281	0.263	<u>0.673</u>	0.216	0.156
Women Officers Accepted by Men Officers	0.113	<u>0.574</u>	0.330	0.077	<u>0.513</u>	0.107
Individual Capabilities Efficiently Utilized	<u>0.624</u>	0.044	0.166	<u>0.438</u>	<u>0.312</u>	0.146
Men Feel Need to be Superior	-0.163	-0.218	<u>-0.433</u>	-0.090	-0.022	-0.205

TABLE 26

Rotated Factor Matrix for Preference Items: Officer and Enlisted

Preference Items	OFFICER			ENLISTED		
	Factor			Factor		
	1	2	3	1	2	3
On Shore--Working With	0.134	<u>0.721</u>	0.163	0.184	0.151	<u>0.585</u>
At Sea--Working With	<u>0.795</u>	0.176	0.256	<u>0.678</u>	0.223	<u>0.303</u>
On Shore--Subordinates	0.197	<u>0.734</u>	0.145	0.299	0.259	<u>0.596</u>
At Sea--Subordinates	<u>0.789</u>	0.263	0.199	<u>0.745</u>	0.247	0.257
On Shore--Supervisors	0.168	0.266	<u>0.579</u>	0.137	<u>0.683</u>	<u>0.320</u>
At Sea--Supervisors	<u>0.507</u>	0.060	<u>0.589</u>	<u>0.421</u>	<u>0.682</u>	0.132

TABLE 27

Rotated Factor Matrix for Abilities Items (I): Officer and Enlisted

Abilities Items (I)	OFFICER				ENLISTED			
	Factor				Factor			
	1	2	3	4	1	2	3	4
Competing with men	<u>0.484</u>	0.082	<u>0.313</u>	0.287	<u>0.377</u>	0.033	<u>0.457</u>	0.250
Exercising authority	<u>0.451</u>	<u>0.433</u>	<u>0.322</u>	<u>0.349</u>	<u>0.336</u>	0.296	<u>0.471</u>	0.210
Dealing with men in subordinate positions	0.187	<u>0.523</u>	0.142	0.166	0.280	<u>0.426</u>	0.261	-0.019
Dealing with women in subordinate positions	0.058	<u>0.353</u>	0.110	-0.026	0.017	<u>0.358</u>	0.041	0.071
Stand stress & strain at management level	<u>0.572</u>	0.294	<u>0.339</u>	0.123	<u>0.396</u>	0.110	<u>0.457</u>	0.174
Work at sea	<u>0.697</u>	0.128	0.218	0.088	<u>0.641</u>	0.091	<u>0.374</u>	0.146
Command ashore	<u>0.549</u>	0.286	0.289	0.048	0.137	0.080	0.175	<u>0.411</u>
Command at sea	<u>0.734</u>	0.187	0.168	0.052	<u>0.590</u>	0.192	0.212	0.236
Manager/subordinate relationships	<u>0.366</u>	<u>0.354</u>	<u>0.650</u>	0.088	0.275	0.199	<u>0.524</u>	<u>0.343</u>
Giving orders	<u>0.373</u>	<u>0.352</u>	<u>0.643</u>	0.117	0.274	<u>0.309</u>	<u>0.603</u>	0.239

TABLE 28

Rotated Factor Matrix for Abilities Items (II): Officer and Enlisted

Abilities Items (II)	OFFICER				ENLISTED			
	Factor				Factor			
	1	2	3	4	1	2	3	4
Dependability	0.225	0.104	0.053	<u>0.385</u>	0.290	-0.007	0.287	<u>0.429</u>
Repair complex mechanical equipment	0.165	0.201	<u>0.736</u>	0.093	0.194	0.185	<u>0.699</u>	0.160
Repair complex electronic equipment	0.148	0.161	<u>0.728</u>	0.156	0.124	0.086	<u>0.703</u>	0.225
Inspire confidence	<u>0.526</u>	0.078	0.170	0.215	<u>0.401</u>	0.094	-0.002	<u>0.418</u>
Routine administrative tasks	0.110	<u>0.721</u>	0.120	0.078	0.077	<u>0.636</u>	0.071	0.077
Make a decision and stick with it	<u>0.578</u>	0.062	0.073	<u>0.446</u>	<u>0.613</u>	0.136	0.087	0.245
Leadership	<u>0.664</u>	0.094	0.089	<u>0.307</u>	<u>0.499</u>	0.094	0.205	<u>0.345</u>
Control emotions	<u>0.591</u>	0.163	0.147	0.214	<u>0.567</u>	0.174	0.156	0.152
Analyze information And Facts	0.288	0.076	0.217	<u>0.481</u>	<u>0.314</u>	0.131	0.255	<u>0.558</u>
Operate under pressure	<u>0.620</u>	0.187	0.227	0.296	<u>0.582</u>	0.156	0.255	0.279
Clerical tasks	0.132	<u>0.724</u>	0.219	0.082	0.206	<u>0.632</u>	0.134	0.036
One's duties in general	<u>0.331</u>	0.037	0.103	<u>0.571</u>	0.173	0.048	0.168	<u>0.516</u>

TABLE 29
Rotated Factor Matrix for Abilities Items: Officer

Item	Factor					
	1	2	3	4	5	6
Abilities I						
Competing with men	0.215	0.094	0.127	0.187	<u>0.523</u>	0.105
Exercising authority	<u>0.576</u>	0.078	0.094	0.238	<u>0.472</u>	-0.063
Dealing with men in subordinate positions	<u>0.533</u>	0.053	-0.013	0.145	0.178	-0.045
Dealing with women in subordinate positions	<u>0.314</u>	-0.104	0.042	0.080	0.054	0.032
Stand stress and strain at management level	<u>0.318</u>	0.042	0.153	<u>0.377</u>	<u>0.566</u>	0.016
Work at sea	0.150	0.025	0.197	0.221	<u>0.665</u>	0.040
Command ashore	<u>0.337</u>	-0.013	0.061	0.257	<u>0.550</u>	0.120
Command at sea	0.167	0.078	0.176	0.206	<u>0.707</u>	-0.020
Manager/subordinate relationships	<u>0.522</u>	0.024	0.104	<u>0.320</u>	<u>0.400</u>	<u>0.375</u>
Giving orders	<u>0.541</u>	0.065	0.111	0.294	<u>0.414</u>	<u>0.334</u>

TABLE 29 (Cont.)

Rotated Factor Matrix for Abilities Items: Officer

Item	Factor					
	1	2	3	4	5	6
Abilities II						
Dependability	0.091	-0.080	0.066	<u>0.390</u>	0.155	0.155
Repair complex mechanical equipment	0.066	0.131	<u>0.715</u>	0.165	0.173	0.009
Repair complex electronic equipment	0.059	0.026	<u>0.717</u>	0.169	0.200	0.024
Inspire confidence	<u>0.331</u>	0.070	0.139	<u>0.352</u>	0.284	-0.102
Routine administrative tasks	0.025	<u>-0.739</u>	0.002	0.049	-0.042	0.023
Make a decision and stick with it	0.192	0.019	0.006	<u>0.601</u>	0.285	-0.094
Leadership	0.299	0.079	0.081	<u>0.520</u>	<u>0.391</u>	-0.186
Control emotions	0.096	0.129	0.156	<u>0.476</u>	<u>0.391</u>	-0.150
Analyze information and facts	0.141	-0.013	0.181	<u>0.527</u>	0.077	0.105
Operate under pressure	0.203	0.130	0.224	<u>0.545</u>	<u>0.435</u>	-0.098
Clerical tasks	0.005	<u>-0.737</u>	-0.146	-0.010	-0.103	-0.018
One's duties in general	0.174	-0.122	0.114	<u>0.606</u>	0.153	0.118

TABLE 30

Rotated Factor Matrix for Abilities Items: Enlisted

Item	Factor					
	1	2	3	4	5	6
Abilities I						
Competing with men	<u>0.530</u>	0.062	0.142	0.199	0.239	0.058
Exercising authority	<u>0.561</u>	-0.075	0.067	0.180	0.176	<u>0.320</u>
Dealing with men in subordinate positions	0.207	0.010	0.110	0.148	0.207	<u>0.477</u>
Dealing with women in subordinate positions	0.061	0.033	0.025	0.020	-0.011	<u>0.344</u>
Stand stress and strain at management level	<u>0.474</u>	0.027	0.216	0.230	0.279	0.132
Work at sea	<u>0.474</u>	0.039	0.171	0.245	<u>0.501</u>	0.111
Command ashore	<u>0.374</u>	0.054	0.013	0.185	0.038	-0.034
Command at sea	<u>0.390</u>	-0.071	0.171	<u>0.246</u>	<u>0.474</u>	0.131
Manager/subordinate relationships	<u>0.628</u>	0.116	0.107	0.240	0.097	0.184
Giving orders	<u>0.647</u>	0.006	0.121	0.250	0.058	<u>0.335</u>

TABLE 30 (Cont.)
Rotated Factor Matrix for Abilities Items: Enlisted

Item	Factor					
	1	2	3	4	5	6
Abilities II						
Dependability	<u>0.300</u>	0.192	0.184	<u>0.390</u>	-0.047	0.087
Repair complex mechanical equipment	0.115	-0.163	<u>0.674</u>	0.188	0.115	0.083
Repair complex electronic equipment	0.134	0.047	<u>0.651</u>	0.117	0.075	0.071
Inspire confidence	0.255	0.079	-0.101	<u>0.465</u>	0.144	0.137
Routine administrative tasks	0.042	<u>0.645</u>	-0.008	0.035	0.032	0.091
Make a decision and stick with it	0.236	-0.166	0.115	<u>0.449</u>	0.201	0.118
Leadership	<u>0.451</u>	-0.175	0.222	<u>0.397</u>	0.083	0.169
Control emotions	0.144	-0.165	0.063	<u>0.406</u>	0.266	0.026
Analyze information and facts	0.221	0.138	0.241	<u>0.521</u>	0.010	-0.008
Operate under pressure	0.252	-0.187	0.223	<u>0.526</u>	<u>0.306</u>	0.094
Clerical tasks	0.046	<u>0.691</u>	-0.051	-0.002	-0.073	-0.029
One's duties in general	0.192	0.133	0.170	<u>0.399</u>	0.039	0.083

TABLE 31

Rotated Factor Matrix for Role Items: Officer

Role Items	Factor				
	1	2	3	4	5
Preferential Treatment in Facilities and Services	0.041	<u>0.627</u>	0.057	0.036	0.013
Changes Proposed in Z-Gram 116 Not Beneficial for the Navy	<u>0.585</u>	0.041	<u>0.313</u>	0.297	0.049
Women Subject to the Draft	0.245	<u>0.326</u>	0.162	<u>0.404</u>	0.050
Same Opportunities, including Sea Duty and Flying Status	<u>0.762</u>	0.196	0.244	0.140	-0.016
Assigned as Traditionally Assigned	<u>0.598</u>	0.095	<u>0.416</u>	<u>0.335</u>	0.059
Women Aboard Combatant Ships Would be in the Way	<u>0.663</u>	0.023	<u>0.464</u>	0.078	0.105
Women have been Serving in the Fields Most Needed	<u>0.362</u>	0.184	<u>0.328</u>	<u>0.405</u>	0.069
Women Assigned to Ships at Sea	<u>0.862</u>	0.130	0.122	0.240	0.013
<u>All</u> Ratings open to Enlisted Women	<u>0.559</u>	0.186	0.226	<u>0.364</u>	0.083
Civilian Female Work Force	0.246	0.076	0.150	<u>0.402</u>	0.099
Serving On Board Ship is a Job for Men	<u>0.833</u>	0.117	0.204	0.179	0.055

TABLE 31 (Cont.)

Rotated Factor Matrix for Role Items: Officer

Role Items	Factor				
	1	2	3	4	5
Women Aboard Ships Would Cause Irritation	<u>0.785</u>	0.076	0.160	0.228	0.162
Rules and Regulations Apply Equally to Men and Women	0.110	<u>0.544</u>	0.024	0.010	0.084
Women Not Required to Bear Arms in Combat	<u>0.332</u>	<u>0.392</u>	0.227	0.179	0.070
If Women On Board Ships, Men Could Not Perform their Jobs as Well	<u>0.647</u>	0.098	0.162	0.088	<u>0.315</u>
Women Command Only Activities Related to Administration of Women	<u>0.402</u>	0.047	<u>0.529</u>	<u>0.311</u>	0.153
No Special Concessions for Women in the Navy	0.010	<u>0.730</u>	-0.008	0.058	-0.042
Personality Requirements of Command are Incompatible With Feminine Characteristics	<u>0.363</u>	0.043	<u>0.609</u>	0.174	0.073
Women on Board Ships Under the Same Living and Working Conditions As Men	0.071	<u>0.654</u>	0.021	0.163	0.094
Training Programs for Women Separate From those for Men	0.213	0.207	0.195	0.241	<u>0.375</u>

TABLE 32

Rotated Factor Matrix for Role Items: Enlisted

Role Items	Factor			
	1	2	3	4
Preferential Treatment in Facilities and Services	0.113	<u>0.540</u>	-0.057	0.139
Changes Proposed in Z-Gram 116 Not Beneficial for the Navy	<u>0.305</u>	0.069	<u>0.535</u>	0.042
Women Subject to the Draft	0.091	0.221	0.191	<u>0.512</u>
Same Opportunities, including Sea Duty & Flying Status	0.191	0.067	<u>0.662</u>	<u>0.315</u>
Assigned as Traditionally Assigned	<u>0.454</u>	0.178	<u>0.512</u>	0.195
Women Aboard Combatant Ships Would be in the Way	<u>0.306</u>	0.017	<u>0.674</u>	0.131
Women have been Serving in the Fields most Needed	<u>0.362</u>	0.271	<u>0.384</u>	0.107
Women Assigned to Ships at Sea	0.116	0.052	<u>0.791</u>	<u>0.318</u>
All Ratings open to Enlisted Women	<u>0.305</u>	0.136	<u>0.443</u>	<u>0.352</u>
Civilian Female Work Force	0.264	0.256	<u>0.347</u>	0.037
Serving On Board Ship is a Job for Men	0.259	0.089	<u>0.810</u>	0.219
Women Aboard Ships Would Cause Irritation	0.169	0.026	<u>0.844</u>	0.058
Rules and Regulations Apply Equally to Men and Women	0.073	<u>0.550</u>	0.079	-0.007

TABLE 32 (Cont.)

Rotated Factor Matrix for Role Items: Enlisted

Role Items	Factor			
	1	2	3	4
Women Not Required to Bear Arms in Combat	0.045	0.130	0.168	<u>0.443</u>
If Women On Board Ships, Men Could not Perform their Jobs as Well	0.191	0.079	<u>0.754</u>	0.173
Women Command Only Activities Related to Administration of Women	<u>0.613</u>	0.125	<u>0.448</u>	0.095
No Special Concessions for Women in the Navy	0.006	<u>0.603</u>	0.040	0.082
Personality Requirements of Command are Incompatible With Feminine Characteristics	<u>0.560</u>	-0.063	<u>0.448</u>	0.102
Women on Board Ships Under the Same Living and Working Conditions As Men	-0.080	<u>0.608</u>	0.033	0.231
Training Programs for Women Separate From Those for Men	0.275	<u>0.410</u>	<u>0.318</u>	0.060

of the other items. These two items appear to be different in that agreement with each of the other items represents a statement that women are well accepted and do not experience discrimination. These two items, however, reflect difficulties for Navy women. For the officers two factors were identified: "opportunities" and "acceptance." While this pattern is somewhat replicated in the enlisted data, the separation between the two factors is not so clear.

A set of items asked the individual for his personal preference regarding men vs women as persons to work with, supervise, or to have as subordinates at sea and on shore. For the officers the items divided into two sets: preferences at sea and on shore. However, an additional factor included both the items regarding supervisors. For the enlisted data there was a factor which appears to reflect preferences regarding supervisors and another which reflects preferences at sea. However, again, the separation for enlisted personnel is not as clear as that for the officer sample.

The ability items were analyzed as two sets and as one combined group of items. For both samples, for both analyses, certain factors clearly emerged. One of these factors includes the items dealing with clerical and administrative ability. Another includes the two items dealing with mechanical and electronic ability. The rest of the items cannot be differentiated into clearly separate factors. These items generally appear to be dealing with abilities necessary for command or leadership. These results are consistent with the analyses of the abilities items in the NSS 72-1 questionnaire.

For both the officer and the enlisted data, the role items separate into two groups. One group includes items which pertain to equality of treatment for men and women in the Navy. The second group includes the remainder of the role items.

Item-total correlations

Each of the items within the sets of abilities, role, and acceptance items was correlated with the total for that set. These correlation coefficients are presented in Tables 33-34. Each coefficient has been adjusted to remove the effect of that particular item from the total score. Thus, the coefficients presented reflect the correlation between the item and the total of the remaining items in that group of items.

Two of the items in the acceptance group did not have high positive correlations with the total. These two items are those dealing with the need for education regarding the role of Navy women and the need for men to feel superior. A low item-total

TABLE 33
Item-Total Correlations: Officers

Items	Item-total Correlation
Acceptance	
Effort to educate personnel	-0.245
Career development patterns	0.467
Enlisted women accepted by enlisted men	0.308
No discrimination on the basis of sex	0.495
Woman officer's value to the Navy	0.342
Opportunities to develop individual capabilities	0.500
Women officers accepted by men officers	0.362
Individual capabilities efficiently utilized	0.382
Men feel need to be superior	-0.141
Abilities I	
Competing with men	0.558
Exercising authority	0.702
Dealing with men in subordinate positions	0.434
Dealing with women in subordinate positions	0.224
Stand stress and strain at management level	0.694
Work at sea	0.631
Command ashore	0.655
Command at sea	0.656
Manager/subordinate relationships	0.693
Giving orders	0.702

TABLE 33 (Continued)

Item-Total Correlations: Officers

Items	Item-total Correlation
Abilities II	
Dependability	0.356
Repair complex mechanical equipment	0.483
Repair complex electronic equipment	0.489
Inspire confidence	0.505
Routine administrative tasks	0.379
Make a decision and stick with it	0.581
Leadership	0.594
Control emotions	0.500
Analyze information and facts	0.495
Operate under pressure	0.671
Clerical tasks	0.436
One's duties in general	0.502
Role	
Preferential treatment in facilities and services	0.288
Changes proposed in Z-Gram 116 not beneficial for the Navy	0.634
Women subject to the draft	0.490
Same opportunities, including sea duty and flying status	0.749

TABLE 33 (Continued)

Item-Total Correlations: Officers

Items	Item-total Correlation
Assigned as traditionally assigned	0.739
Women aboard combatant ships would be in the way	0.681
Women have been serving in the fields most needed	0.586
Women assigned to ships at sea	0.785
<u>All</u> ratings open to enlisted women	0.691
Civilian female work force	0.396
Serving on board ship is a job for men	0.773
Women aboard ships would cause irritation	0.725
Rules and regulations apply equally to men and women	0.284
Women not required to bear arms in combat	0.542
If women on board ships, men could not perform their jobs as well	0.614
Women command only activities related to administration of women	0.612
No special concessions for women in the Navy	0.250
Personality requirements of command are incompatible with feminine characteristics	0.548
Women on board ships under the same living and working conditions as men	0.345
Training programs for women separate from those for men	0.438

TABLE 34

Item-Total Correlations: Enlisted

Items	Item-total Correlation
Acceptance	
Effort to educate personnel	-0.067
Career development patterns	0.361
Enlisted women accepted by enlisted men	0.346
No discrimination on the basis of sex	0.568
Woman officer's value to the Navy	0.326
Opportunities to develop individual capabilities	0.486
Women officers accepted by men officers	0.336
Individual capabilities efficiently utilized	0.429
Men feel need to be superior	-0.086
Abilities 1	
Competing with men	0.562
Exercising authority	0.618
Dealing with men in subordinate positions	0.430
Dealing with women in subordinate positions	0.152
Stand stress and strain at management level	0.567
Work at sea	0.624
Command ashore	0.316
Command at sea	0.578
Manager/subordinate relationships	0.620
Giving orders	0.667

TABLE 34 (Continued)

Item-Total Correlations: Enlisted

Items	Item-total Correlation
Abilities II	
Dependability	0.453
Repair complex mechanical equipment	0.510
Repair complex electronic equipment	0.455
Inspire confidence	0.425
Routine administrative tasks	0.269
Make a decision and stick with it	0.524
Leadership	0.557
Control emotions	0.505
Analyze information and facts	0.560
Operate under pressure	0.618
Clerical tasks	0.359
One's duties in general	0.368
Role	
Preferential treatment in facilities and services	0.141
Changes proposed in Z-Gram 116 not beneficial for the Navy	0.533
Women subject to the draft	0.382
Same opportunities, including sea duty and flying status	0.694

TABLE 34 (Continued)

Item-Total Correlations: Enlisted

Item	Item-total Correlation
Assigned as traditionally assigned	0.693
Women aboard combatant ships would be in the way	0.651
Women have been serving in the fields most needed	0.550
Women assigned to ships at sea	0.732
All ratings open to enlisted women	0.621
Civilian female work force	0.401
Serving on board ship is a job for men	0.783
Women aboard ships would cause irritation	0.671
Rules and regulations apply equally to men and women	0.188
Women not required to bear arms in combat	0.282
If women on board ships, men could not perform their jobs as well	0.679
Women command only activities related to administration of women	0.622
No special concessions for women in the Navy	0.178
Personality requirements of command are incompatible with feminine characteristics	0.508
Women on board ships under the same living and working conditions as men	0.189
Training programs for women separate from those for men	0.476

correlation was observed for the item pertaining to women's difficulty in dealing with women in subordinate positions and for the items identified as "equality of treatment."

Criterion Groups Analyses

The entire sample was divided into two groups for the total of each of the abilities sets, the total for the role set, and the item pertaining to attitudes toward Z-116. For the total scores on the ability and the role items, these groups were defined as the upper and the lower 25% of the distribution for each total score. For the item pertaining to Z-116, these groups were defined as those giving a negative and a positive answer to the item. For each group the mean was computed for each of the ability items, each of the role items, and the total ability and role scores. The difference in mean response to the items identified within the role group as "equality of treatment" was not significant between the positive and negative groups on either set of ability items or on the item pertaining to Z-116. There was a significant difference between each of the pairs of groups for all of the other items.

Re-grouping of Items

On the basis of the item analyses, the items were combined into more consistent groups. These combinations are presented in Appendix D.

Discussion

It was proposed that attitudes toward expanded roles for women in the Navy would be determined both by beliefs regarding women's ability to perform the roles, and by feelings regarding what roles women should perform. Within this framework, it is equally probable for someone to oppose the new roles and believe that women are capable as it is for him to oppose the new roles and believe that women are not capable.

Perceptions of what women can do and feelings about what they ought to do were not found to be independent for the items used in these analyses. It is not possible, however, to make any causal statements about this relationship. Some persons may report they are opposed to certain roles because they feel that women are not capable of performing them. However, it is equally possible for persons to justify their opposition by assuming that women are not capable.

Decisions regarding future use of these items would, of course, have to be made with reference to the purpose for which the items would be used. The abilities items include three clearly differentiable groups. The items identified collectively as "equality of treatment" are distinct from the remainder of the items in the set of items pertaining to women's role in the Navy. In order to distinguish the "acceptance" and the "opportunities" items for enlisted personnel it would be desirable to attempt to reformulate these items. Preferences to work with or for men/women clearly depend upon whether the work is to be done at sea or on shore, although preferences for supervisors are less dependent upon location.

These analyses cannot provide any evidence as to how well this set of items would predict other kinds of responses.

Conclusions and Recommendations

Attempts to induce naval personnel to regard favorably the proposed role changes should be focused first on perceptions of women's abilities to perform these roles. Exposure to competent performance on the part of women would probably be an effective technique for this purpose. This could be readily implemented through integrated training programs. The difficulty with use of this procedure is the limited number of women in the Navy. It would require supplementation by educational programs.

Many of the items included in the Women in the Navy questionnaire appear to be measuring what they were intended to assess. Some should be rewritten and re-evaluated. All of the items should be validated against an external criterion, preferably a behavioral index.

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APPENDIX A

NSS 72-1 QUESTIONNAIRE ITEMS

Abilities

	Only men possess it	Men are much more likely to possess	Men are somewhat more likely to possess it	Men and women are equally likely to possess it	Women are somewhat more likely to possess it	Women are much more likely to possess it	Only women possess it
ABILITY TO PERFORM CLERICAL TASKS	1	2	3	4	5	6	7
ABILITY TO CONTROL EMOTIONS	1	2	3	4	5	6	7
ABILITY TO REPAIR COMPLEX MECHANICAL EQUIPMENT AFTER RECEIVING PROPER TRAINING	1	2	3	4	5	6	7
ABILITY TO REPAIR COMPLEX ELECTRONIC EQUIPMENT AFTER RECEIVING PROPER TRAINING	1	2	3	4	5	6	7
DEPENDABILITY	1	2	3	4	5	6	7
ABILITY TO INSPIRE CONFIDENCE	1	2	3	4	5	6	7
ABILITY TO PERFORM ROUTINE ADMINISTRATIVE TASKS	1	2	3	4	5	6	7
ABILITY TO MAKE A DECISION AND STICK WITH IT	1	2	3	4	5	6	7
LEADERSHIP ABILITY	1	2	3	4	5	6	7

	Only men possess it	Men are much more likely to possess	Men are somewhat more likely to possess it	Men and women are equally likely to possess it	Women are somewhat more likely to possess it	Women are much more likely to possess it	Only women possess it
ABILITY TO ANALYZE INFORMATION AND FACTS	1	2	3	4	5	6	7
ABILITY TO OPERATE UNDER PRESSURE	1	2	3	4	5	6	7
ABILITY TO PERFORM ONE'S DUTIES IN GENERAL	1	2	3	4	5	6	7

A-4

Work Experience With Women

	YES	NO
HAVE YOU WORKED <u>WITH</u> A MEMBER OF THE OPPOSITE SEX WHILE IN THE NAVY?	2	1
HAVE YOU WORKED <u>FOR</u> A MEMBER OF THE OPPOSITE SEX WHILE IN THE NAVY?	2	1
HAVE YOU SUPERVISED A MEMBER OF THE OPPOSITE SEX WHILE IN THE NAVY?	2	1

DISCRIMINATION ITEMS

	I AM NOT DISCRIMINATED AGAINST	I AM SOMEWHAT DISCRIMINATED AGAINST	I AM OFTEN DISCRIMINATED AGAINST
PROMOTION OPPORTUNITIES	1	2	3
DAILY DUTY ASSIGNMENTS	1	2	3
HOUSING ACCOMMODATIONS	1	2	3
ATTITUDES AND TREATMENT BY SUPERIORS	1	2	3
TRAINING OPPORTUNITIES	1	2	3
ON-BASE CLUBS AND SOCIAL ACTIVITIES	1	2	3
ATTITUDES OF NAVY PERSONNEL	1	2	3

STATUS OF MINORITIES

LESS THAN THEIR SHARE OF OPPORTUNITIES	EQUAL OPPORTUNITIES	MORE THAN THEIR SHARE OF OPPORTUNITIES
---	------------------------	---

AT PRESENT IN THE NAVY, MINORITIES HAVE

3 2 1

BACKGROUND

What is your sex?	Male	1
	Female	2
What is your race?	Caucasian	1
	Negro	2
	Other	3
What is your highest level of education?	Less than high school graduate	1
	High school graduate or GED equivalency	2
	Less than two years of college	3
	Two years or more of college, no degree	4
	Associate degree	5
	Bachelor's degree	6
	Graduate hours, no graduate degree	7
	Master's or doctoral level degree	8
What are your current service plans?	Will be eligible for retirement as of June 1972	4
	Plan to remain on active duty until I retire	3
	Undecided	2
	Plan to get out as soon as possible	1

APPENDIX B

WIN SURVEY QUESTIONNAIRE ITEMS

ACCEPTANCE OF WOMEN IN THE NAVY

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
The Navy needs to make a determined effort to educate its personnel regarding the role of women in the organization	1	2	3	4	5
Present career development patterns for women in the Navy are as adequate as are those for men	1	2	3	4	5
Enlisted women are well accepted by enlisted men	1	2	3	4	5
There is no discrimination on the basis of sex in the Navy	1	2	4	4	5
Most men officers will determine a woman officer's value to the Navy by her professional capabilities alone	1	2	3	4	5
The opportunities for Navy women to develop their individual capabilities are as good as are those for men	1	2	3	4	5
Women officers are well accepted by men officers	1	2	3	4	5

ABILITIES OF WOMEN IN THE NAVY I

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Women in the Navy are capable of successfully competing with men in the Navy	5	4	3	2	1
Women officers are as capable as men in effectively exercising authority	5	4	3	2	1
Women in supervisory positions in the Navy have more difficulty than men in dealing with men in subordinate positions	1	2	3	4	5
Women in supervisory positions in the Navy have more difficulty than men in dealing with women in subordinate positions	1	2	3	4	5
Navy women are as able as Navy men to stand the stress and strain which one must to function effectively at the management level	5	4	3	2	1
Given proper training women could work at sea as well as men	5	4	3	2	1
Women officers are temperamentally suited for command ashore	5	4	3	2	1

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Women officers are temperamentally suited for command at sea	5	4	3	2	1
Women in the Navy can effectively handle manager/subordinate relationships	5	4	3	2	1
Women in supervisory positions in the Navy are capable of giving orders effectively	5	4	3	2	1

ABILITIES OF WOMEN IN THE NAVY II*

	Men are much more likely to be capable of acquiring it	Men are somewhat more likely to be capable of acquiring it	Men and women are equally likely to be capable of acquiring it	Women are somewhat more likely to be capable of acquiring it	Women are much more likely to be capable of acquiring it
Dependability	1	2	3	2	1
Ability to learn to repair complex mechanical equipment	1	2	3	2	1
Ability to learn to repair complex electronic equipment	1	2	3	2	1
Ability to inspire confidence	1	2	3	2	1

	Men are much more likely to be capable of acquiring it	Men are somewhat more likely to be capable of acquiring it	Men and women are equally likely to be capable of acquiring it	Women are somewhat more likely to be capable of acquiring it	Women are much more likely to be capable of acquiring it
Ability to perform routine administrative tasks	1	2	3	2	1
Ability to make a decision and stick with it	1	2	3	2	1
Leadership ability	1	2	3	2	1
Ability to control emotions	1	2	3	2	1
Ability to analyze infor- mation and facts	1	2	3	2	1
Ability to operate under pressure	1	2	3	2	1
Ability to perform clerical tasks	1	2	3	2	1
Ability to perform one's duties in general	1	2	3	2	1

*The manner in which these items was scored yields a measure of stereotyping which disregards direction. For certain items the statement that women are more capable is a positive statement, for other items it is not.

Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
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The full range of individual capabilities of women in the Navy are as efficiently utilized as are those of men

1 2 3 4 5

Women who work with men experience considerable difficulty because the men feel a need to be superior

1 2 3 4 5

THE ROLE OF WOMEN IN THE NAVY

Strongly In Favor	Moderately In Favor	Neither Opposed Nor In Favor	Moderately Opposed	Strongly Opposed
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Z-Gram 116 promotes equal rights and opportunities for women in the Navy.
How do you feel about this directive?

5 4 3 2 1

Yes, With No Restrictions	Yes, With Restrictions	No
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In your opinion, should Navy women serve on board Navy ships at sea?

3 2 1

In your opinion, what should be the primary role of women in the Navy?

To fill those billets which the individual woman is physically and mentally qualified to fill 5

The same as for men 4

To release men for sea duty 3

To provide a reserve capability only 3

To fill those billets for which women, as a group, are particularly well suited 2

To provide a feminine touch wherever assigned 1

I am unsure what the role should be 0

P 8

Strongly Agree Agree Neither Agree Nor Disagree Disagree Strongly Disagree

Women in the Navy should not receive preferential treatment in facilities and services 5 4 3 2 1

The changes proposed in Z-Gram 116 (regarding equal opportunities for women) would not be beneficial for the Navy 1 2 3 4 5

If the draft were to continue, women as well as men should be subject to the draft 5 4 3 2 1

Women in the Navy should be given the same opportunities as their male counterparts, including sea duty and flying status 5 4 3 2 1

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Women officers should be assigned only to those jobs to which they traditionally have been assigned (educational service officers, admin. and personnel, communications)	1	2	3	4	5
It would be dangerous to have women aboard combatant ships at sea because they would be in the way	1	2	3	4	5
The fields in which women have been serving are the fields in which they are most needed by the Navy	1	2	3	4	5
Women who are physically and mentally qualified should be assigned to ships at sea	5	4	3	2	1
All ratings should be open to enlisted women	5	4	3	2	1
The Navy should develop a competent and qualified civilian female work force rather than increase the number of women in the Navy	1	2	3	4	5
Serving on board ship is a job for men	1	2	3	4	5
An effort to change policies to permit women to serve aboard Navy ships would cause more irritation than it would be worth	1	2	3	4	5
All rules and regulations should apply equally to men and women in the Navy	5	4	3	2	1

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
If the equal rights for women amendment is ratified and women become subject to the draft, women should not be required to bear arms in combat	1	2	3	4	5
If women were on board ships at sea, men could not perform their jobs as well	1	2	3	4	5
Women officers should be in command of only those activities related to the administration of women	1	2	3	4	5
If women are to be given equal opportunities, there should be no special concessions for women in the Navy	5	4	3	2	1
Women should not be in command because the personality requirements of command are incompatible with desirable feminine characteristics	1	2	3	4	5
If women do serve on board ships they must do so under the same living and working conditions as men	5	4	3	2	1
Navy training programs for women should be separate from those for men	1	2	3	4	5

DISCRIMINATION ITEMS

	I Am Discriminated Against	I Am Not Discriminated Against
Promotion Opportunities	2	1
Work Assignments	2	1
Housing Accommodations	2	1
Treatment by Superiors/Supervisors	2	1
Training Opportunities	2	1
On-Base Clubs and Social Activities	2	1
Attitudes of Navy Personnel	2	1

PREFERENCES FOR PERSONS WORKED WITH, FOR, AND SUPERVISED

	Men	Women	No Preference
On shore, I would prefer working with	1	3	2
At sea, I would prefer working with	1	3	2
On shore, I would prefer having as subordinates	1	3	2
At sea, I would prefer having as subordinates	1	3	2
On shore, I would prefer having as supervisors	1	3	2
At sea, I would prefer having as supervisors	1	3	2

BACKGROUND

Which of the following best describes you?	Black	2
	Caucasian	1
	Other	3
What is your sex?	Male	1
	Female	2
What are your current service plans?	Now eligible for retirement	5
	Remain on active duty until eligible for retirement	4
	Not stay until eligible for retirement	3
	Undecided	2
	Leave active duty as soon as possible	1
What is the highest level of education you have completed?	Less than high school graduate	1
	High school graduate or GED equivalency	2
	Less than two years of college	3
	Two years or more of college, no degree	4
	Associate degree	5
	Bachelor's degree	6
	Graduate hours, no degree	7
	Master's degree	8
	Ph.D. or professional degree	9

APPENDIX C

FACTOR MATRICES FOR DISCRIMINATION ITEMS
AND ABILITIES ITEMS (NSS 72-1)

Item	Factor		
	1	2	3
DISCRIMINATION			
Promotion Opportunities	<u>0.495</u>	-0.008	0.133
Daily Duty Assignments	<u>0.449</u>	-0.249	0.288
Housing Accommodations	<u>0.319</u>	0.106	0.221
Attitudes and Treatment by Superiors	<u>0.526</u>	-0.122	<u>0.461</u>
Training Opportunities	<u>0.519</u>	-0.071	0.239
On-Base Clubs and Social Activities	<u>0.370</u>	0.092	<u>0.432</u>
Attitudes of Navy Personnel	<u>0.430</u>	0.078	<u>0.561</u>
ABILITY			
Clerical Ability	-0.001	-0.048	<u>0.467</u>
Control Emotions	<u>0.462</u>	0.090	-0.094
Repair Mechanical Equipment	0.235	<u>0.763</u>	-0.022
Repair Electronic Equipment	0.141	<u>0.767</u>	0.025
Dependability	<u>0.473</u>	0.001	0.300
Inspire Confidence	<u>0.557</u>	0.003	0.036
Administrative Ability	-0.020	0.036	<u>0.429</u>
Make Decisions	<u>0.616</u>	0.097	-0.035
Leadership	<u>0.692</u>	0.204	0.005
Analyze Information	<u>0.485</u>	0.163	0.058
Operate Under Pressure	<u>0.659</u>	0.185	-0.042
Perform Duties in General	<u>0.399</u>	0.075	0.304

APPENDIX D

RE-GROUPING OF ITEMS (WIN SURVEY)

Item	Response Scoring				
	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
ACCEPTANCE					
Enlisted women are well accepted by enlisted men	5	4	3	2	1
Most men officers will determine a women officer's value to the Navy by her professional capabilities alone	5	4	3	2	1
Women officers are well accepted by men officers	5	4	3	2	1
OPPORTUNITIES					
Present career development patterns for women in the Navy are as adequate as are those for men	5	4	3	2	1
There is no discrimination on the basis of sex in the Navy	5	4	3	2	1
The opportunities for Navy women to develop their individual capabilities are as good as are those for men	5	4	3	2	1
The full range of individual capabilities of women in the Navy are as efficiently utilized as are those of men	5	4	3	2	1

Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
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ABILITY

Ability to Command

Women in the Navy are capable of successfully competing with men in the Navy	5	4	3	2	1
Women officers are as capable as men in effectively exercising authority	5	4	3	2	1
Women in supervisory positions in the Navy have more difficulty than men in dealing with men in subordinate positions	1	2	3	4	5
Women in supervisory positions in the Navy have more difficulty than men in dealing with women in subordinate positions	1	2	3	4	5
Navy women are as able as Navy men to stand the stress and strain which one must absorb to function effectively at the management level	5	4	3	2	1
Given proper training women could work at sea as well as men	5	4	3	2	1
Women officers are temperamentally suited for command ashore	5	4	3	2	1
Women officers are temperamentally suited for command at sea	5	4	3	2	1
Women in the Navy can effectively handle manager/subordinate relationships	5	4	3	2	1
Women in supervisory positions in the Navy are capable of giving orders effectively	5	4	3	2	1

	Men are much more likely to be capable of acquiring it	Men are somewhat more likely to be capable of acquiring it	Men and Women are equally likely to be capable of acquiring it	Women are somewhat more likely to be capable of acquiring it	Women are much more likely to be capable of acquiring it
Dependability	1	2	3	2	1
Ability to inspire confidence	1	2	3	2	1
Ability to make a decision and stick with it	1	2	3	2	1
Leadership ability	1	2	3	2	1
Ability to control emotions	1	2	3	2	1
Ability to analyze information and facts	1	2	3	2	1
Ability to operate under pressure	1	2	3	2	1
Ability to perform one's duties in general	1	2	3	2	1
Mechanical/Electronic Ability					
Ability to learn to repair complex mechanical equipment	1	2	3	2	1
Ability to learn to repair complex electronic equipment	1	2	3	2	1
Administrative/Clerical Ability					
Ability to perform routine administrative tasks	1	2	3	2	1
Ability to perform clerical tasks	1	2	3	2	1

Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
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EQUAL TREATMENT

Women in the Navy should not receive preferential treatment in facilities and services

5	4	3	2	1
---	---	---	---	---

All rules and regulations should apply equally to men and women in the Navy

5	4	3	2	1
---	---	---	---	---

If women are to be given equal opportunities, there should be no special concessions for women in the Navy

5	4	3	2	1
---	---	---	---	---

If women do serve on board ships they must do so under the same living and working conditions as men

5	4	3	2	1
---	---	---	---	---

ROLE OF WOMEN IN THE NAVY

The changes proposed in Z-Gram 116 (regarding equal opportunities for women) would not be beneficial for the Navy

1	2	3	4	5
---	---	---	---	---

If the draft were to continue, women as well as men should be subject to the draft

5	4	3	2	1
---	---	---	---	---

Women in the Navy should be given the same opportunities as their male counterparts, including sea duty and flying status

5	4	3	2	1
---	---	---	---	---

Women officers should be assigned only to those jobs to which they traditionally have been assigned (educational service officers, admin. and personnel, communications)

1	2	3	4	5
---	---	---	---	---

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
It would be dangerous to have women aboard combatant ships at sea because they would be in the way	1	2	3	4	5
The fields in which women have been serving are the fields in which they are most needed by the Navy	1	2	3	4	5
Women who are physically and mentally qualified should be assigned to ships at sea	5	4	3	2	1
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Serving on board ship is a job for men	1	2	3	4	5
An effort to change policies to permit women to serve aboard Navy ships would cause more irritation than it would be worth	1	2	3	4	5
If the equal rights amendment is ratified and women become subject to the draft, women should not be required to bear arms in combat	1	2	3	4	5
If women were on board ships at sea, men could not perform their jobs as well	1	2	3	4	5
Women officers should be in command of only those activities related to the administration of women	1	2	3	4	5

Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
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Women should not be in command because the personality requirements of command are incompatible with desirable feminine characteristics

1	2	3	4	5
---	---	---	---	---

Navy training programs should be separate from those for men

1	2	3	4	5
---	---	---	---	---

	Men	Women	No Preference
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PREFERENCES

Shore

On shore, I would prefer working with

1	3	2
---	---	---

On shore, I would prefer having as subordinates

1	3	2
---	---	---

Sea

At sea, I would prefer working with

1	3	2
---	---	---

At sea, I would prefer having as subordinates

1	3	2
---	---	---

Supervisors

On shore, I would prefer having as supervisors

1	3	2
---	---	---

At sea, I would prefer having as supervisors

1	3	2
---	---	---